

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A display apparatus for displaying an image, the display apparatus comprising:

a matrix display device comprising a plurality of pixels having electrodes, an optical state of each pixel being defined by particles moving in a fluid between the electrodes dependent on parameters selected from at least one of

a value of a drive voltage,

a polarity of the drive voltage, [[and]] or

a duration of a drive period during which the drive voltage is present across the electrodes of the pixel;

a driver for supplying a sequence of the drive voltages across the electrodes of the pixel during corresponding successive drive periods, each sequence of the drive voltages [[is]] being applied according to input image data that produces the displayed image; and

a DC-balancing circuit comprising

a controller for:

adjusting at least one of the parameters ~~for determining~~ to determine a time-average value of the drive voltages for the pixel, the time-average value ~~of the drive voltage for consecutive fields of the pixel is~~ being a sum of products of the drive voltage values with

corresponding polarities and drive  
period durations, and

~~adjusted~~ adjusting the time-average value

substantially to zero while the pixel is  
being driven according to the input  
image data ~~that produces the displayed~~  
image, and

a memory for storing the sum,

wherein the ~~parameters are adjusted in steps corresponding  
to sub-fields of the field of the pixel~~ controller is  
adapted for

comparing an absolute value of the sum with a  
threshold number; and

controlling the driver to supply a reset pulse to  
the pixel when the absolute value of the  
sum surpasses the threshold number.

2. (Cancelled)

3. (Currently amended) The display apparatus as claimed in claim 1, further  
comprising a control circuit for driving the matrix display device in a sub-field  
mode wherein grey scales ~~corresponding to the sub-field of each pixel~~ the pixels  
are determined by a plurality of sub-fields receiving the drive ~~voltage~~ voltages  
~~during the corresponding field~~, and wherein the drive period is the duration of the  
plurality of sub-fields receiving the drive voltage.

4. (Cancelled)

5. (Currently amended) The display apparatus as claimed in claim ~~[[2]]~~ 1, wherein the display device further comprises a temperature sensor for sensing a temperature of the pixel, and wherein the controller is further adapted for modifying the ~~running total~~ sum dependent on the temperature.
6. (Currently amended) The display apparatus as claimed in claim ~~[[2]]~~ 1, wherein the controller is adapted for modifying the ~~running total~~ sum non-linearly dependent on the ~~value~~ values of the drive ~~voltage~~ voltages.
7. (Currently amended) The display apparatus as claimed in claim ~~[[2]]~~ 1,  
wherein after an initial period of time required to obtain a desired coloration of the pixel, the desired coloration is substantially independent from ~~[[the]]~~ a duration of ~~[[the]]~~ a pre-determined drive ~~period~~ voltage, and  
wherein the controller is adapted for controlling the duration of the pre-determined drive ~~period~~ voltage to be longer than the initial period of time when ~~the running total indicates that~~ a polarity of the pre-determined drive voltage is opposite to a ~~plurality of an initial drive voltage corresponding to the initial period~~ polarity of the sum.
8. (Currently amended) The display apparatus as claimed in claim 7, wherein the controller is adapted for controlling the duration of the pre-determined drive ~~period~~ voltage not to ~~exceed~~ become longer than the initial period of time when the polarity of the sum is changed after the initial period of time ~~causes the running total to change sign~~.

9. (Currently amended) The display apparatus as claimed in claim ~~[[2]]~~ 7, ~~wherein after an initial period of time required to obtain a desired coloration of the pixel, the desired coloration is substantially independent from the duration of the drive period, and wherein the controller is adapted for controlling the duration of the~~ pre-determined drive period voltage to be substantially identical to the initial period of time when the ~~running total indicates that a~~ polarity of the pre-determined drive voltage is the same as a plurality of an initial drive voltage corresponding to the initial period and the polarity of the sum are identical.
10. (Previously presented) The display apparatus as claimed in claim 7,  
wherein the display device is an electrophoretic display, and  
wherein the pixel comprises two switching electrodes and a further electrode, the driver being adapted for supplying the sequence of drive voltages to the two switching electrodes and the further electrode controlling intermediate optical states of the pixel.
11. (Currently amended) The display apparatus as claimed in claim 7,  
wherein the display device is an electrophoretic display, ~~[[and]]~~  
wherein the pixel comprises at least two electrodes, and  
wherein the driver is adapted for supplying the sequence of drive voltages between the at least two electrodes for setting a grey scale of the pixel by providing a drive voltage lower than a usually applied drive voltage which sets a grey level by modulating the duration of the drive period during which the usually applied drive voltage is present.

12. (Previously presented) The display apparatus as claimed in claim 1, wherein the display device is an electrophoretic display.
13. (Currently amended) A method of displaying an image by driving a matrix display device comprising a plurality of pixels, an optical state of each pixel being defined by particles moving in a fluid between electrodes dependent on parameters including a value of a drive voltage, a polarity of the drive voltage ~~[[and]]~~ or a duration of a drive period during which the drive voltage is present across the electrodes of the pixel, the method comprising acts of:
- ~~supplying a sequence of the drive voltages across the electrodes of each pixel~~ the pixels during corresponding successive drive periods,
  - ~~each of the sequence of drive voltages~~ [[are]] being applied according to input image data that produces the displayed image;
  - adjusting at least one of the parameters to [[set]] obtain a time-average value of the drive ~~voltage~~ voltages for the pixel; ~~and for obtaining so that the time-average value is a substantially zero time-average value of the drive voltage across the pixel~~ while the pixel is being driven according to the input image data that produces the displayed image, the time-average value being a sum of products of the drive voltage values with corresponding polarities and drive period durations[[.]];
  - ~~wherein the time-average value is based on a product of the value of the drive voltage and the duration of the drive period in a corresponding drive period of a previous consecutive field of the pixel, the parameters are adjusted in steps corresponding to sub-fields of the field of the pixel that produces the displayed image~~ comparing an absolute value of the sum with a threshold number; and

supplying a reset pulse to the pixel when the absolute value of the sum  
surpasses the threshold number.

14. (Currently amended) A display apparatus for displaying a plurality of images, the display apparatus comprising:

a matrix display device comprising a plurality of pixels having electrodes,  
an optical state of each pixel being defined by particles moving in a  
fluid between the electrodes dependent on parameters selected  
from at least one of

a value of a drive voltage,

a polarity of the drive voltage, ~~[[and]]~~ or

a duration a drive period during which the drive voltage is  
present across the electrodes of the pixel;

a driver for supplying a sequence of the drive voltages across the  
electrodes of the pixel during corresponding successive drive  
periods, ~~[[each]]~~ the sequence of the drive voltages ~~[[is]]~~ being  
applied according to input image data that produces one of the  
plurality of displayed images; and

a DC-balancing circuit comprising a controller for ~~adjusting at least one of  
the parameters to set a time-average value for each pixel to adjust  
at least one of the value of the drive voltage applied during a  
subsequent sub-field drive period and a duration of the subsequent  
sub-field drive period while the pixel is being driven by subsequent  
input image data that produces a subsequent one of the plurality of  
displayed images, to compensate for the drive voltage applied  
during a previous sub-field drive period and a duration of the  
previous sub-field drive period while the pixel is being driven by  
previous input image data that produces a previous one of the~~

~~plurality of displayed images to obtain a substantially zero time-  
average value for each consecutive field of the pixel,  
wherein the parameters are adjusted in steps corresponding to sub-fields  
of the field of the pixel~~

comparing an absolute value of a sum of products of the  
drive voltage values with corresponding polarities and  
drive period durations with a threshold number; and  
controlling the driver to supply a reset pulse to the pixel  
when the absolute value of the sum surpasses the  
threshold number.